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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/383,115	08/25/1999	PETER H. VAN DER VEEN	21336-703	6121

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10/01/2002

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EXAMINER

AVELLINO, JOSEPH E

ART UNIT

PAPER NUMBER

2156

DATE MAILED: 10/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

AR

Office Action Summary

Application No.

09/383,115

Applicant(s)

VAN DER VEEN, PETER H.

Examiner

Joseph E. Avellino

Art Unit

2156

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 6-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08/25/1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 6-16 are presented for examination.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Symmetric multiprocessing system and method using global locks for synchronization of critical and non-critical areas.

Drawings

3. The drawings are objected to because of reasons cited by the Draftsperson. See enclosed PTO Form 948 included with this Office Action. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6, 7, and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (USPN 5,771,382) (hereinafter Wang) in view of Gamache et al. (USPN 5,202,991) (hereinafter Gamache).

5. Referring to claims 6 and 13-16, Wang discloses a method for responding to a thread requiring a call to a critical area by:

requesting a global lock (col. 7, lines 11-19 and steps 808 and 812 of Figure 8);
and

responding to said global lock being available by performing the steps of:

acquiring said global lock (col. 7, lines 11-19);

performing said call to said critical area of said operating system (col. 7, lines 64-66); and

releasing said global lock (col. 8, lines 23-26).

Wang does not specifically disclose that the critical area is the critical area of an operating system, however Gamache discloses that an operating system can have a critical area (col. 2, lines 12-19). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Gamache with Wang to prevent corruption of critical areas of code.

6. Referring to claim 7, Wang in view of Gamache discloses a method as described in the claims above. Wang further discloses responding to said thread requiring a call

Art Unit: 2156

to a non-critical area by performing said call to said non-critical area of the system (Figure 6 and col. 8, lines 50-62).

Claim 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Gamache as applied to claims 6 and 7 above, and further in view of Dangelo (USPN 5,946,487).

7. Referring to claim 8, Wang in view of Gamache disclose a method as described in the claims above. Wang in view of Gamache do not disclose that the operating system is a micro kernel operating system. Dangelo discloses that the operating system is a micro kernel operating system (col. 8, lines 22-24). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Dangelo with Wang and Gamache because it will provide a direct interface with the hardware and schedule threads based on the most appropriate hardware available. See Wang, col. 10, line 66 to col. 11, line 5 and Figure 3).

8. Referring to claim 9, Wang in view of Gamache in view of Dangelo disclose a method as described in the claims above. Wang further discloses pre-empting any non-critical threads currently executing prior to acquiring global lock (Figures 3, 6, 8 and col. 7, lines 61-67).

9. Claim 10 is rejected for similar reasons as¹ stated above.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Gamache in view of Dangelo as applied to claim 10 above, and further in view of Jones et al. (USPN 5,812,844) (hereinafter Jones).

10. Referring to claim 11, Wang in view of Gamache in view of Dangelo disclose a method as described in the claims above. Wang in view of Gamache in view of Dangelo do not disclose further comprising the step of prioritizing execution of threads in accordance with how their respective call latencies will impact real time operation. Jones discloses prioritizing execution of threads in accordance with how their respective call latencies will impact real time operation (col. 5, lines 57-67). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Jones with Wang, Gamache and Dangelo further reducing scheduling overhead and increasing scheduling efficiency.

11. Referring to claim 12, Wang in view of Gamache in view of Dangelo disclose a method as described in the claims above. Wang in view of Gamache in view of Dangelo do not disclose the step of scheduling execution of said threads to be performed by predetermined time deadlines. Jones discloses scheduling execution of said threads to be performed by predetermined time deadlines (col. 7, lines 27-31). It would be obvious to a person of ordinary skill in the art at the time the invention was

Art Unit: 2156

made to combine the teaching of Jones with Wang, Gamache and Dangelo to allow for time-specific scheduling and increase performance for modern multimedia applications as seen in Jones (col. 2, lines 50-53).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kleiman (USPN 5,515,538) discloses an apparatus and method for interrupt handling in a multi-threaded operating system kernel.

IBM Technical Disclosure Bulletin number NN9303385 discloses the use of simple locks to protect critical sections of an operating system kernel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph E. Avellino whose telephone number is (703) 305-7855. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alvin E. Oberley can be reached on (703) 305-9716. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Art Unit: 2156

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

JEA
September 10, 2002



JOHN A. FOLLANSBEE
PRIMARY EXAMINER